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THE APPLICATION OF PRESSURE

IN

DISEASES OF THE UTERUS.

BY V. H. TALIAFERRO, M.D., ATLANTA,

Professor of Obstetrics and Diseases of Women and Children in the Atlanta Medical College.

REPRINT FROM THE TRANSACTIONS OF THE MEDICAL ASSOCIATION OF GEORGIA.

JAS. P. HARRISON & Co., Printers,
Atlanta, Ga.

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THE APPLICATION OF PRESSURE IN DISEASES OF THE UTERUS.

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Congestion and disordered local nutrition are ruling factors in a large class of pathological conditions of the uterus, comprising some of the most intractable of the non-malignant type. Uterine hyperplasia and hypertrophy are not infrequent results of malnutrition and chronic hyperæmia, and may justly be termed the opprobria of gynecology.

The purport of this paper is to show that *pressure*, as a therapeutic agent, can be made practicable and efficient in these disorders, and that it is no less a remedy of wonderful power in the hands of the gynecologist than the surgeon.

My attention was first called to the action of general pressure upon the diseased uterus in a patient, with hypertrophic elongation of the cervix, whom I had under preparatory treatment for amputation of the supra-vaginal portion. The elongation was supra-vaginal and complicated with complete cystocele and vaginal eversion. The highly engorged and elongated neck, together with the vagina and bladder protruding from the vulva and hanging between the thighs, presented a tumor of considerable size. The inability of the patient to empty the bladder, together with partial strangulation of the cervix by the vaginal orifice,

occasioned great inconvenience and suffering. It was for the relief, of a most violent attack of this kind, that I was first called to see her. She had despaired of permanent cure, and only hoped for temporary relief. The protruded parts were restored to the pelvic cavity by careful pressure with the hand, after first emptying the bladder, and placing the patient in the knee-chest position. A pledget of cotton, saturated with glycerine, was placed in the vault of the restored vagina against the cervix, for the purpose of keeping the parts within the pelvis and for the detergent action of the glycerine upon the congested blood vessels. She felt greatly relieved and was left with instructions to keep the recumbent posture until I saw her again for renewal of the dressing. Upon my next visit, two days subsequently, I found my patient up and at her household work, the parts having expelled the dressing and rolled out again between the thighs in their old position. These dressings were repeated a number of times with imperfect and unsatisfactory results, so far as retention of the mass in the pelvis was concerned, but with great relief of the congestion and tenderness. In order to get rid of the trouble of these repeated dressings, I endeavored to keep the parts restored by means of pessaries, preparatory for operation at my clinic before the medical class. Quite a variety of pessaries were used, and quite sufficient to satisfy me of the utter futility of further effort in this direction. Determined, if possible, not to be thwarted in my efforts to keep the protruded parts within the pelvis, and thereby to give the woman the utmost possible comfort while at her daily duties, she was placed upon her knees and chest and the parts carried within the pelvis to their utmost elevation. Now, with a Sims speculum retracting the perineum, and with the enormous vagina distended to its utmost capacity, the

entire vaginal canal from its vault to the floor of the pelvis was completely and compactly tamponed with cotton; the first pledgets containing glycerine, both for its detergent powers by osmosis, and for its powerfully disinfectant virtues. I was not prepared to say how my patient would bear this new condition of things, for her pelvis seemed to be literally filled with cotton. Her vagina was enormously large, and was capable of great distention and elongation; the uterus was free from adhesions, and with the entire pelvic roof was capable of considerable elevation, and so long as the tampon remained, this position of the organs was secure.

When the patient returned to me in three days, as directed, for renewal of the dressing, it was found to be perfectly in place, clean and free from odor. She expressed herself in the most enthusiastic terms as to her improved condition; whereas, before, she dragged along with painful difficulty in walking, she could now move with rapidity, ease and comfort, and had been doing satisfactory work as cook and house servant.

In removing the tampon (which was done in the knee-chest position,) I observed that the cotton pledgets had packed quite hard, from pressure and the wetting incident to the free osmosis, and it occurred to me to substitute sheep's wool for the cotton, which I did in the subsequent tamponing.

Sheep's wool possesses elasticity and resiliency, which it retains under pressure and moisture, and hence is especially adapted to our purpose as a tampon.

My patient was improving rapidly in general health, while her comfort and freedom of locomotion were entirely restored. The tampons were, therefore, continued, not with the least idea of any curative results, but simply with the

view of making her comfortable and improving the general health, preparatory to amputation of the cervix. After a number of tampons, the uterive cavity was greatly reduced in depth, and my astonishment was beyond measure, when, after fourteen days of tamponing, I found, by careful measurement with the probe, that the uterus had lost three inches in its depth. In the beginning of her treatment, the cavity measured *six inches* in depth, from the end of the cervix to the fundus. It now, by careful measurement, gave *three inches.* This unlooked for and remarkable result could only be explained by the withdrawal of the dragging weight of the pendant vagina upon the cervix, and the *direct pressure* of the tampon. The chief agent in this rapid tissue metamorphosis, was undoubtedly *the pressure* upon the soft and spongy uterine texture.

Amputation is now the only recognized method of radical cure in hypertrophic and hyperplastic elongations of the cervix of the uterus, and hence, no other remedy was thought of in this case; but when the time for operation, as given out to the medical class, arrived, the material was unexpectedly gone. This unlooked for result suggested to my mind the application of pressure in all the pathalogical stages of the organ, from the simplest congestion, to its greatest degree of hypertrophic or hyperplastic growth.

To permanently secure the results obtained, it was necessary to reduce the size of the enormous, lax vagina. This was done before the medical class in the winter of 1876, by Schrœder's method, described in his diseases of women, in Ziemssen's Cyclopædia, and which he had performed but once at the time of publication. My own operation, so far as I know, is the second one upon record, and was published in the reports of the Atlanta Academy of Medicine, in April, 1877. From the high estimate I place upon the

operation, I have taken the liberty of copying Schrœder's illustration, which gives at once a fair idea of its peculiar features. By reference to the first operation performed by Dr. Sims, as detailed in his Uterine Surgery, it will be seen that Schrœder's method does not differ from Dr. Sims', except in the manner of introducing the stitches, and is, therefore a *modification* of the procedure of Sims. The modification is, however, a valuable one, and will, doubtless, popularize the original method of Sims, as it meets fully the objectionable features for which its author abandoned it.

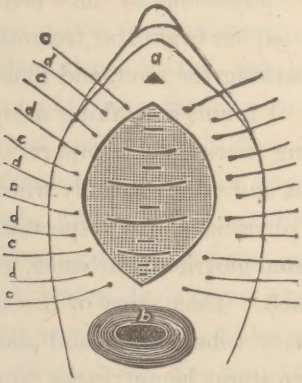

Figure 1.

Narrowing of the anterior vaginal wall by freshening the entire surface, and employing, alternately, superficial (*c*) and deep (*d*) sutures.
a, Orifice of the urethra ; *b*, os uteri. (Schrœder.)

While fully awakened by the case which has been detailed, to the value of *direct pressure* in hypertrophic and hyperplastic growths of the cervix, the wide range of its utility did not impress me until the following case was submitted to its test :

Mrs. S——, from a distance ; thirty-eight years of age ; married eighteen years ; no children ; one miscarriage at three or four months, soon after marriage. Her bad health dates from the miscarriage. For the past few years she had

grown gradually worse, until I saw her the 15th day of October, 1877. I found her in bed, greatly enfeebled, pale, emaciated, and vomiting or retching almost incessantly. The history was that she had for several years been under treatment for disease of the uterus, and for disease of the stomach, with a gradual downward tendency in health. Some five or six months previously, she had taken permanently to her bed, to which she had since been closely confined. So extreme, was her prostration, that she could scarcely speak above a whisper. For several weeks past she had been under able physicians of this city, who, I have no doubt, had subjected her to skillful treatment without relief. She had great loathing for food, and took little in the way of nourishment. I found her taking morphine and whisky freely, and getting partial and temporary respite from her distressing nausea and vomiting only when well under their influence. Her physicians had suspected, from the persistent and aggravated gastric disturbance, serious organic disease of the stomach. The history of her family antecedents revealed hereditary tuberculosis, and she herself had been the subject of two slight hemorrhages from the lungs. She had not menstruated for the past six or eight months. Altogether, the prognosis seemed most unfavorable.

A thorough physical examination revealed a condition of the uterine organs which I thought explained the history of the case from the beginning, as well as her present distressing, and indeed alarming constitutional condition. The uterus was found acutely retroflexed, adherent, greatly congested, and exquisitely sensitive. The periuterine structures were tender and inelastic. Here was a local state of things, quite sufficient certainly, to account for the distressing symptoms. Distant pathological sympathies had so nearly masked the real seat of trouble and had so well mim-

icked organic disease, that an error in diagnosis could hardly be reprehensible. The blood taint is an unfortunate complication here, and it is impossible to say now, how much it may be in fact a pathological factor.

It was determined to stop as rapidly as could be safely borne, the *opiates and stimulants*, and if possible to introduce a larger amount of nutrition in the patient's blood. It was, at the same time, determined to carefully test the efficacy of *pressure by the tampon* upon the congested and tender uterine organs. In view of the existing blood taint, this must be graduated with great care and delicacy, lest we kindle up an active pelvic inflammation.

The patient being placed in the left lateral position of Sims, a small tampon of cotton saturated with glycerine was placed in the vaginal roof through Sims' speculum. She was put upon Valentine's meat juice and wine of pepsin, with instructions to diminish one-half the morphine and whisky. The following morning I was encouraged to find my patient feeling better, having vomited but little and slept better than for weeks. The whisky and morphine had been decreased as directed, and the nourishment had been taken regularly. The uterine dressing was removed and another applied of larger size. *From this time there was no vomiting.*

The following morning wool was substituted for the cotton, and the tampon increased in size by one or two small pledgets, and so on every morning until the vagina was filled perfectly and compactly to the pelvic floor.

The patient rapidly gained in strength and flesh, and in less than two weeks had left off entirely the opium and stimulants, except the wine of pepsin taken with the beef. The tampon remained, at first, one day; subsequently two, and finally three days. So soon as the strength permitted, she

was placed by her nurse in the *knee-chest* position, as the preferable one for the application of the tampon.

After some three weeks of treatment thus kept up, and the general and local conditions greatly improved, I ventured upon the careful introduction of the probe. As the instrument entered the cavity, just within the internal os, and turning backward in the direction of the retroflexed body, the patient cried out with pain. She was greatly overcome by the shock and the whole muscular system, seemingly, thrown into a tremor. Feeling apprehensive, lest I had ventured too far, the tampon was reapplied, the first pledgets, as usual, containing glycerine. Directing my patient to send for me should the pain continue, I left her, fully expecting to be re-called, but, not hearing from her, I did not return, until the regular interval of three days, when I found her doing well, her eyes and voice greeting me with a bright and cheerful welcome. The probe was again introduced, and subsequently at every dressing, with progressively decreasing pain, until it no longer gave the least unpleasant sensation.

The position of the uterus, now some five weeks under pressure by the tampon, was greatly improved, and the adhesions, so far as could be ascertained, giving way. The capacity of the vagina had considerably increased, so that a much larger quantity of wool was necessary for the packings, which were now made quite firm. She was able to walk about the room unassisted, and sat up, a large part of every day. The tampon and probe were continued about two weeks longer, when the adhesions, congestion and tenderness were thought to be sufficiently destroyed to attempt complete and permanent reduction of the organ. This was done by placing the patient on her back and introducing a hard rubber stem, with small vaginal bulb, when the body

of the uterus was, easily and without pain, lifted up to its normal position, by carrying the bulb of the stem, with two fingers placed against it, back upon the posterior wall of the vagina toward the hollow of the sacrum. This method of replacing the retroflexed uterus belongs to Schrœder, but the principle is found in *Sims' repositor*. I like it, for this purpose, better than the repositor, because of its greater simplicity and easier manipulation.

The uterus, with the stem, was now secured, by Albert Smith's pessary (modification of Hodge). These gave her no discomfort, immediately—nor did they subsequently. After some two weeks, the stem was removed, the vaginal pessary remaining, with the uterus perfectly secured in position. The patient was now taught to remove and introduce the pessary herself. She was able to go visiting, walking several blocks, and, in a week or ten days, was sent to Southwestern Georgia to her husband, and to a climate more congenial to her delicate lungs. She has continued to improve in strength, and now walks as far as three or four miles at one time, without discomfort.

My first visit to this patient was October 15th, and last visit December 20th, following, being just a little more than two months under treatment.*

Case 3.—Mrs. S., of this city; age, twenty-four; married two years; pregnant four months after marriage, and miscarriage at six and a half months of pregnancy. Her bad health, and confinement to bed, dates from this miscarriage; has not been out of bed for more than a year, and, the greater part of this time, unable to sit up. The promi-

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*I neglected to mention, at the proper place, that this patient had menstruated without the least pain and discomfort once while under my immediate care. I saw her recently, while on a visit to this city, in May, 1878. She tells me that she has menstruated regularly, and without pain. The menstruation had previously (dating from her miscarriage) been excessively painful.

nent constitutional symptoms are, great debility and nervousness, emaciation, nausea, anorexia, and sleeplessness. The prominent pelvic symptoms are, painful bearing down in the pelvis, attended with a constant and distressing burning sensation. There is no history of hereditary blood taints, and, altogether, a good record as to physical stamina. Physical exploration revealed a marked retroflexion and highly sensitive uterus, with endometritis and granular erosion of the os. The organ was movable, but not altogether free from adhesions. She had been treated with caustics, tents, vaginal douches, and a variety of pessaries. The able and skillful gentleman who had her last in charge, and who has had a large gynecological experience, I am sure submitted her to appropriate and skillful management, both topical and mechanical. Encouraged by results in preceding cases, which had so far exceeded my expectations, I determined to use *pressure* in this.

My first visit to this patient was November 7th, 1877. As she was nearing her menstruation, nothing was done except the daily application of the cotton pledget, with glycerine, for several successive days, after which, her period coming on, I did not see her again until November 25th, some four or five days after the menstrual cessation, when the first tampon was applied. The vaginal canal was small, the mucus membrane red and irritable, and the posterior vaginal wall shortened, and without its usual deep cul-de-sac at its cervical junction. Only a partial tampon was, therefore, applied at first—the vault of the vagina being well packed, and about one-half of the canal filled with the view of gradually inuring the vaginal walls to the pressure and the presence of a foreign substance, and, at the same time, to make more capacious, by gradual distention, this part of the vagina.

The tampon was removed every two days at first, and subsequently every three days. Its application was kept up continuously, being left off only for menstruation, (and once to test the tolerance of the organs to the intra-uterine stem and vaginal pessary,) until February 10th, when the tenderness and congestion having disappeared, the posterior vaginal wall and cul-de-sac restored to normal dimensions and the general health so far improved that she was out of bed the greater part of the day, and walking about her room. It was now determined to leave off the tampons and resort to permanent replacement by pessaries. A flat zinc and copper stem, two inches in length, was introduced and the uterus replaced by Schroeder's method, and the whole secured in position by Albert Smith's pessary. These were worn without discomfort, and with progressively increased improvement for two weeks, when the stem was removed and the vaginal instrument left in place. The patient in the mean time has been improving in general health, the pelvic, nervous and sympathic troubles having disappeared with the exception of still a slight indigestion. She is up all the day, walks where she wishes, and rides out to Ponce de Leon Springs, three miles from the city.*

Case 4.—Mrs. F., thirty years of age—married—three children ; youngest six years of age. Bad health dates from the last labor. There has been no miscarriage. No history of hereditary taint traceable. Has been alternately in and out of bed for six years, with gradual but perceptable decline in general health, and for the past two months closely confined to bed. The prominent constitutional symptoms have been nausea and vomiting, painful oppression in the chest, great nervousness with occasional paroxysms of what

* She is now, June 17th, 1878, visiting friends in a distant part of the State, and as a matter of security, still wears an Albert Smith pessary, which she has been taught to remove at night and apply in the morning.

she terms "spells." She is emaciated, weak and despondent. There is no appetite, and she invariably spits up her food after each meal, with occasional vomiting in the intervals. The bowels are constipated. She sleeps badly. Menstruation recurs every three weeks, lasting four days with aggravation of the symptoms. There is a dragging heaviness in the pelvis, and a constant painful pressure in the right iliac region extending to the hip. This, with the oppression in the chest, occasions more distress and anxiety than all the other troubles.

This woman had been under the management of an able and skillful gentleman for the past three years, with alternate periods of improvement and relapses, and the alternate periods of hope and despair so usual to such cases. Physical exploration revealed marked anteflexion, congestion and enlargement of the uterus. The cervix was very large and hard, and the walls of the canal so firmly approximated by the hypertrophied tissues as to make it difficult to introduce a small probe. The os was abraded and granular, and its broad slit firmly compressed. The physical condition of the uterus, together with the general history, leaves but little doubt of the existence of subinvolution as the basis of the now complicated pathological condition of the organ. To the subinvolution has been superadded, displacement, congestion, and the areola hyperplasia of Thomas, endometritis and granular erosion of the os. Quite a complication truly, and yet such as will be recognized by the gynecologist as of frequent occurrence, and the most intractable, certainly of the non-malignant diseases, of the uterus. This is the chronic parenchymatous metritis of the old, and still of most of the modern writers. It is the chronic infarctus of Kiwisch—the diffuse proliferation of connective tissue of Klob, and the areola hyperplasia of Thomas. It is the opprobrium of

gynecology, and encountered always with grave apprehensions as to cure. This is the disease of our patient, broken down in health, bed-ridden and emaciated.

This patient came under my professional care January 20th, 1878, when the first tampon was applied. From this time the nausea and vomiting, and the painful pressure in the pelvis disappeared, with very partial returns of the pelvic symptoms at the menstrual periods, but no return at any time of the vomiting. The tampons have been continued (being renewed every three days) up to the present time, April 17th, 1878, except during menstruation.

It will be remembered that this patient menstruated every three weeks profusely. The first *period* after the commencement of treatment she went to the full time of twenty-eight days. The second menstruation went two or three days over time, and the third period ten days over time. The menstruation has been attended with much less discomfort, and the quantity, according to the patient's account, quite normal. She has gradually and perceptibly gained in strength and flesh. She sits up most of the day, and walks about the house and yard. The uterus originally measured three and one-sixth inches in depth of cavity. It now measures a little under two and one-half inches in depth. The displacement has been sensibly improved; the large indurated cervix has been greatly reduced, and looks quite normal in size and condition. Indeed, the whole organ is wonderfully improved in its general condition, and has every appearance of a near approach to a healthy standard.

My first visit to this patient was January 20th, 1878. She has, therefore, now been under treatment up to May 20th 1878—just four months.*

* At the time of writing, the uterus in case 4 measured a little less than 2½ inches in depth. Since this time the uterus has gradually decreased in size under the pressure, until its measurement, June 5, 1878, was two inches, when the tampons were suspended and a metalic stem pessary introduced. She is now, June 15th, menstruating with stem *in situ*.

These cases have been selected from among many which I have treated by this method. They are typical cases, and serve to illustrate my purpose. It is unnecessary here to discuss the value of pressure, or the method by which it acts. It is known to possess marked and decided powers, and especially so in parts where circulation and nutrition are impaired, and the blood vessels have lost their tonicity. As a sorbefacient, it is positive and speedy in its action. Prof. Gross likens it to mercury. He says: "The general effect of the bandage would seem to be somewhat similar to that of mercury, controlling capillary action, and promoting the absorption of effused fluids." If it can be successfully applied to chronic diseases of the uterus, as the foregoing cases would indicate, it must bring to gynecology a boon which, in time, will supplant much of our unsatisfactory uterine therapeutics. In the treatment of chronic congestion, subinvolution, hypertrophy, hyperplasia, and such like intractable conditions, we are constantly and painfully reminded of the incompleteness of our resources, and any remedy making reasonable pretentions to improvement upon the old *regime* so vigorously and confidently inaugurted by Bennett, must receive a glad and joyous welcome.

METHOD OF MAKING PRESSURE TO THE UTERUS.

"The vagina is a musculo-membranous tube remarkable for its extreme dilatability. . . . Elastic elements everywhere pervade this musculo-membranous structure, forming an enormously dilatable channel of communication between the external genitals and the uterus. . . . . The two columns—probably the transverse processes, also—are not exactly opposed, permitting a kind of dovetail approximation of the antero-posterior surfaces, and so more effectually closing the vaginal canal."—*Savage*. Its outlet is narrowed and contracted by the structures forming the pelvic floor,

and chiefly by the ischio-pubic muscle and the perineal body. Its vault receives the neck of the uterus, to which it is attached, and in such a manner as to form the vaginal cul-de-

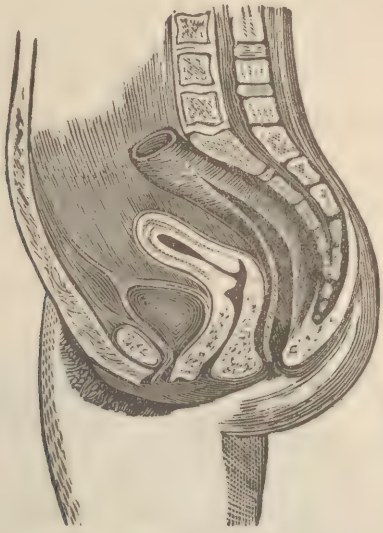

Figure 2.

Normal position of the uterus and vagina, imperfectly showing the narrow vaginal canal, with its closely approximated walls. The recto and vesico-vaginal septa are represented too thick.

sac. The vagina, then, in its natural and undistended condition, is a narrow, closed canal, its surfaces closely fitted by dovetail approximation; but when distended to its full capacity, by placing the woman upon her knees and chest and lifting the perineum for the admission of air, as so clearly taught us by Dr. Sims, all is wonderfully changed. Instead of the closely approximated and narrow canal, we have an enormously distended channel, in which, ordinarily, the finger sweeps without touching either sides or summit. The cervix, before easily reached, is now beyond the touch, and, instead of dipping into and resting upon the vaginal vault,

it hangs from the upper extremity of the vagina, and occupies, with the whole pelvic roof, the utmost elevation.

In this changed condition of things we find the vagina presenting in shape somewhat that of an irregular cone, with its base above and apex below; and in this changed condition, with the uterus *hanging from the vaginal vault from one to two inches higher* than its normal position, the tampon is applied, filling completely and compactly the entire vagina.

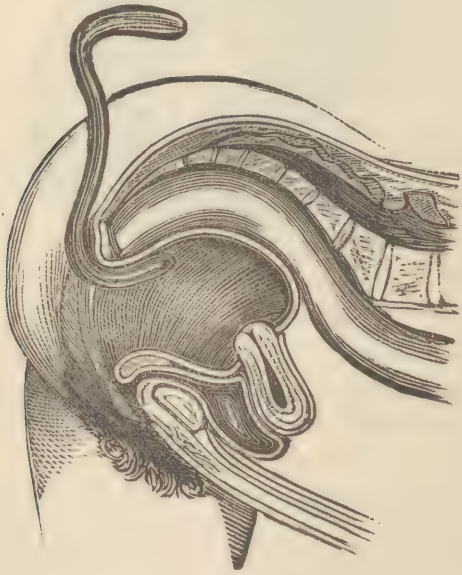

Figure 3.

The vagina dilated to its greatest capacity, with the uterus suspended from its vault at the utmost degree of elevation.

The knee-chest position being now exchanged for the usual and normal positions of the woman, the gravitation of the viscera is directed to the pelvic outlet instead of from it. The effort of the parts to seek their old positions meets with resistance, below, from the tampon and pelvic floor, and above from the force of the superimposed viscera

and abdominal muscles. Here then we have a pressure certainly moderate in degree, *but positive and continuous.*

All must acknowledge the power of continuous pressure, however small in extent, upon the living structures. I claim for the tampon moderate, constant, equable and elastic pressure upon the entire uterus, but greatest upon the cervix.

METHOD OF APPLYING THE TAMPON.

In applying the packing, it should always be borne in mind that the vaginal canal *must be distended and elongated* to its utmost capacity; and the uterus must occupy its *utmost degree of elevation* in the pelvis. These can be obtained only *in the knee and chest position*, so accurately detailed by Dr. Sims.

The material for the tampon should be of *sheeps wool.* Its elasticity and porosity especially fit it for this purpose. It should be clean and carded into bats, and properly disinfected with carbolic acid. The essential prerequisites then for the packing, are: *the position of the woman*, Sims' speculum, dressing forceps and sheeps wool.

Before a good direct light, across the bed, upon a good hard mattress, or better, upon a table, the patient is placed upon her *knees and chest*, with the knees *directly* under the hips, and a little separated. The thighs should be *perpendicular and at right angles with the table.* "She must not arch the spine upward, for this brings into forcible action the abdominal muscles, which should be pefectly relaxed, with the spine rather curved downwards, as we see it in swaybacked animals. With these precautions fully impressed on her, she is to breath easily, and relax the muscles of the abdomen." (Sims.) Dress strings and corsets should be removed or loosened completely. Many women, usually short ones, are unable to bring the chest flat upon the table,

but they can "bend the body forward until the head is brought down to the plane of the table, where it may rest in the two hands, its weight supported on the left parietal bone, while the *elbows are thrown widely out from the sides.*" (Sims.)* The *outstretched elbows* bring the chest as nearly as possible always upon the table. These details may appear tediously careful, but without an attentive observance of them, the tampon will fail in its objects.

The carded wool bats should be broken into small pledgets, or separate pieces; the patient in position as described, the perineum elevated, with a short and broad blade, Sims' speculum, and we are ready for the packing. The first one

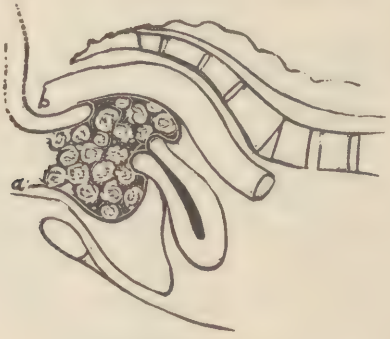

Figure 4.

The vagina packed in its dilated condition, with the uterus at its greatest degree of elevation. The vagina is represented here as loosely filled, in order the better to show the manner of applying the tampon.

or two pieces of the tampon to go immediately over the cervix should be *cotton*, well filled with the best quality of glycerine. The cotton holds the glycerine better than the wool. These little pieces should contain as much glycerine as they can be made to hold, by placing the cotton in the palm of the hand and rubbing in the glycerine, little by little, until it is a pulpy mass. These may be placed, with the

* Italics mine.

dressing forceps, immediately upon the cervix, or one behind it, and the other in front. The pledgets of wool are then successively applied dry, each one being first rolled upon itself rather tightly in order to give the requisite firmness and solidity to the packing. The vault of the vagina is first well filled, and the packing proceeded with *carefully*, the pledgets rolled upon themselves, being placed here and there, and *packed* with probe or dressing forceps; all parts of the vagina being packed as equally firm as possible, and yet not too solid at any point for discomfort. The vaginal canal is thus filled down to the muscular floor of the pelvis, but not below it. If the vaginal outlet is distended it will give discomfort, and a portion of the tampon may be lost. The vaginal orifice should close over the filling.

THE THERAPEUTIC ACTION OF PRESSURE ON THE UTERUS.

The therapeutic effects of pressure by the tampon upon the uterus, are much the same as pressure elsewhere. We may safely classify its field of action as follows:

1st. It diminishes blood supply and nutrition.

2nd. It is in the first degree a sorbefacient.

3rd. It destroys redundant tissues by destructive metamorphosis.

4th. It diminishes nervous action.

5th. It rectifies malpositions.

In this classification, we recognize a wide field of action, adapted to a variety of important pathological conditions of the uterus, among which may be found the most intractable in the whole range of gynecology. Subinvolution, hypertrophy, hyperplasia, congestion, chronic inflammation, inflammatory deposits, fibroid growths, and uterine hyperæsthesia come especially within the compass of its action.

EFFECTS OF THE TAMPON UPON THE VAGINA.

Without experimental knowledge of the operation of the tampon in the vagina, I would be led to suspect frequent intolerance and other unpleasant effects. Such, however, is not the case. Vaginitis, irritable canal, and *acute* inflammation in the pelvic organs, contra-indicate the tampon, and, when they exist, should be removed or modified before putting and keeping the canal on the stretch. Such conditions of the vagina may be very effectually remedied by commencing with very small tampons, applied only to the vaginal vault, and *gradually* increasing them to the full size. In the subinvoluted and lax condition of the vagina, so frequently accompanying diseases of the uterus, it has the effect of gradually restoring the healthfulness of the canal.

If the tampon is firmly applied in the beginning of its use, it will frequently cause abrasions upon the vaginal wall, which may necessitate its discontinuance for a few days. The vagina should always be, at first, lightly packed, or, as I frequently prefer, *partially packed*, filling simply the vaginal vault. A little simple cerate upon a soft cloth, applied to the abrasions when they occur, will enable us to continue the packing, when desirable, and heal the abrasions at the same time.

Now and then a badly-shaped vagina is found, especially in connection with old versions and flexions, causing partial loss of the tampon ; and, in very fat women, the dilatation of the vagina is, at first, not sufficient to give the packing the cone-shape necessary for its retention, and it may be partially, or entirely, expelled. These difficulties, however, are exceptions, and are gradually overcome, as the canal becomes more capacious, and normal in shape; so soon as the cul-de-sacs and vault of the vagina have enlarged, and we

can give a more decided cone-shape to the tampon. The tampon is retained without difficulty when its base is above and its rather broad apex rests below, upon the pelvic floor. The few days rest the vagina gets, during menstruation, when the packing is always left off, is quite sufficient for months of continuous treatment.

In his uterine surgery, Dr. Sims calls attention to the existence of a constriction of the vagina in its superior portion, just below the cervix. My observation is that most vaginas have this *superior constrictor vaginæ*, and often not observable until the vaginal canal has been well dilated by the continuous use of the tampon, when it becomes distinct and prominent. This constriction is more marked posteriorly, and at this point occasionally becomes the seat of abrasions from the pressue of the packings. The intervention of a piece of soft cloth with a little cerate to protect the abraded surface from contact with the wool and a little lighter packing just at this point, is all that is necessary for speedy reparation.

The dilatation of the vaginal canal consequent upon the continued use of the tampon, can have no bad results upon the normal and healthy vagina, and upon the mal-formed, and large subinvoluted vaginas, the final and permanent results are the most satisfactory.

The effects of the tampon upon the distant and distressing sympathies, are often of the most gratifying nature. In case second this was especially noticeable. The vomiting had been continuous and alarming for five consecutive months, and the patient did not vomit after the second tampon. The prominent and leading constitutional distress is often the first to disappear. In case three, nausea, and in case four, neausea and vomiting, were prominent and distressing

symptoms. In each, these disappeared, from the commencement of treatment, not to return again.

In cases two, three and four, the patients had been, for different lengths of time, closely confined to bed from two to twelve months respectively. In each case the patient was walking everywhere in a few weeks.

These results are remarkable, and are such as are certainly not attainable in similar conditions and in the same length of time by any other known method of treatment.

THE COMPARATIVE MERITS OF PRESSURE.

Taking a case of the so-called *chronic metritis*, with its usual complications, in illustration, the treatment would be, according to the most approved and recognized methods, by cauterization, scarification, leeching, tents, or the milder alterative method of iodine, bromide, etc. These are used singly or combined according to the peculiar fancy of the operator. And, efficient work is recognized, if in twelve or eighteen months, a perceptible softening in the indurated tissues has occurred; a slight diminution in the bulk of the enlarged organ, and a perceptible decrease in its sensitiveness with corresponding improvement in the constitutional sympathies and the general health. I am sure I make no exaggeration, (and the cases reported bear me out,) when I say that I have accomplished more by *pressure* with the tampon in a few weeks, than could have been done in months by the usual methods.

1. We have, then, as important comparative merits, *more immediate and speedy results*. This is certainly a desideratum when we consider the long time necessary, and the uncertainty of cure in sub-involution, hypertrophy and chronic metritis.

2. In the usual methods of treatment by caustics, sponge tents, etc., if a safe rule is adopted, the patient is in bed from

three to ten days, according to circumstances, at each treatment. By the tampon, there is not only *no confinement to bed*, but the ability of the patient to exercise to the extent of her strength without damage, is greatly increased. Thus are we enabled to contribute materially to the pleasure and comfort of the patient, as well as to the greater security and improvement of her general health.

3. Treatment by the tampon suspends absolutely the *sexual relations*—a matter oftentimes of considerable importance in the results of treatment, and one, too, in which we so often fail to get voluntary co-operation.

4. The inflammatory accidents incident to other efficient methods of treatment do not apply to the tampon.

5. While caustics and the curette harden the tissues and close, more or less, the uterine canal, *pressure by the tampon* softens the tissues and dilates the canal.

6. Caustics and the curette establish alterative and healthy action by a sacrifice of structure, and a sacrifice oftentimes damaging and irreparable, while, by the tampon, the integrity and identity of the tissues are in no way interrupted.

The thorough scraping of the uterine cavity by the curette, in fungus degeneration of the mucous membrane, must, in a certain proportion of cases, remove the mucous membrane, not only entirely, but permanently; and still more frequently must we have the same results from strong caustic applied to the cavity. The fuming nitric acid applied to the uterine cavity, as taught by Dr. Athill, is, with many, a favorite method of treatment, and, in my opinion, if efficiently done, as taught by Dr. Athill, will rarely fail to destroy completely the mucus membrane; and in such removal we can have but one result, viz: cicatrical tissue, in place of mucus membrane, lined with polymorphous epithelium, in place of the delicate, ciliated columnar. Following such important

textural alterations, sterility and uterine hyperæsthesia, with their train of evils, must almost of necessity come, and with them a permanent pathological condition of the organ.

While I cannot, as yet, bring forward any considerable number of cases of fungus degeneration of the mucus membrane of the uterine cavity treated by the tampon, its invariably prompt beneficial results, controlling the menorrhagia and metrorrhagia at once, attest it a remedy of decided powers in this direction.

In 1856, at the Woman's Hospital, Dr. Sims accidentally discovered the power of the sponge to destroy polypoid growths of the uterus. A large fibroid polypus, filling up completely the uterine cavity, was destroyed by the pressure and drainage of a sponge, which had been forgotten, and left in place for a week. He, and Dr. Emmet, subsequently destroyed small polypoid tumors and fungus granulations by means of the sponge. Dr. Emmet was very fond of the sponge for general hypertrophy, and, according to Dr. Sims, claimed to have often succeeded in doing more in such cases, in a week's time, than could be accomplished by any and all others in two or three months. The occasional septicæmic poisoning and inflammatory troubles occurring from the sponge, have deterred many, and made all more or less timid in its use.

More recently, some of our English friends have claimed originality in the destruction of small fibroid growths of the uterus by the pressure *of tents*, combined with caustics and packing, to the cavity of the uterus. The idea belongs to Dr. Sims, whatever variety of tent or packing to the uterine cavity be used, and the use of powerful caustics, in connection with the tents, is certainly not an improvement upon the method of Sims', and, to say the least, it is of doubtful propriety.

Small tampons of cotton have long been in use as temporary pessaries is displacements. Dr. Sims thought well of them, and applied them always with glycerine. He devised a port-tampon, for their ready application by the patient.

Dr. Thomas, in his Diseases of Women, recommends pledgets of cotton placed in the posterior and anterior vaginal cul-de-sacs, and the vagina lightly filled with cotton to keep these in place, in posterior displacements, as a temporary and preparatory measure for the use of pessaries.

Schrœder adopts a somewhat similar plan in certain displacements.

Prof. Fordyce Barker, in 1853, wrote a paper on the treatment of procidentia by the use of tampons wet with a solution of tanin.

The tampon used in the manner which I have indicated, and for the purpose of *pressure*, has not heretofore been done.

Where there are complications of endometritis, fungus degeneration of the mucus membrane of the cavity or granular erosion of the os, I frequently combine, with the tampon, other means of local treatment. Iodine or iodoform occasionally applied to the diseased cavity may advantageously precede every other application of the tampon. In fungus degeneration of the mucus membrane laminaria, or better, Sussdorffs tupelo tent may be applied to the cavity and the tampon over it. By this means we make pressure from within as well as from without. My friend Dr. Simpsom, of this city, tells me he has recently been using the cloth tents, gradually increasing the size, with iodoform, in conjunction with the tampon with very satisfactory results. In my own cases, when I think it best to combine other means of treatment with the

tampon, I usually select Sussdorffs tupelo tents, or my own cloth tent.

The cloth tent is always preferable when intra-uterine medication is desired in conjunction with intra-uterine pressure. With this tent we may apply to the diseased cavity, very thoroughly, iodine, iodoform, zinc, cantharidal cerate, etc. Iodoform, to the cavity of the uterus and to granular erosions, is a great favorite with me, when used with the tampon. Applied as a plaster to the cervix, it is kept smoothly and perfectly in place by the tampon until removed. The iodoform is a mild and pleasant stimulant and alterative, and at the same time a local sedative. These mild and simple measures are usually quite sufficient, when used with the tampon, for endometritis, erosions, and fungus mucus degeneration, and the uterus is saved the rough usage and bad results incident to caustics and curettes.

In advocating any special method of local uterine treatment, I would not wish to be understood as under-estimating the value of constitutional treatment, adapted to the particular requirements of individual cases. In subinvolution, for instance, ergot is an important aid to any local method in the re-instatement of the suspended involution. In areola hyperplasia, the so-called chronic metritis, ergot is an invaluable agent in the establishment of the retrograde metamorphosis necessary to restoration of health in the organ.

Guiac will meet the constitutional indications in many cases, particularly where there exists a gouty or herpetic element. We must not forget to look to such important auxiliary constitutional measures, in the special conditions calling for them, as may be found in cod liver oil, iron, iodide of potassium, and bi-chloride of mercury.